

Rivkina, K. I.

USSR /Chemical Technology. Chemical Products
and Their Application

1-29

Fats and oils. Waxes. Soap.
Detergents. Flotation reagents.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32800

Author : Rakovskiy V. Ye., Rivkina Kh. I.

Inst : Moskow Institute of Peat

Title : Emulsifying Properties of Peat Bitumens in the
Preparation of Phenolic Antiseptics

Orig Pub: Tr. Mosk. torf. in-ta, 1955, No 3, 167-174

Abstract: A study was made of the emulsifying properties,
in the presence of alkali, of the waxy paraffin
containing oil that can not be pressed out, con-
taining 40% wax, of purified peat wax and of a

Card 1/3

USSR /Chemical Technology. Chemical Products
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I-29

Fats and oils. Waxes. Soap.
Detergents. Flotation reagents.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32800

aqueous emulsions; the preparation has the
following composition: 10 g phenolic oils, 1 g
bitumen, 0.5 g soap, 0.325 g solid KOH. The
latter can be replaced by NaOH, which gives
sufficiently stable aqueous E, but they solidify
on standing and separate on repeated heating.

Card 3/3

RAKOVSKIY, V.Ye. doktor tekhn.nauk; RIVKINA, Kh.I., kand.tekhn.nauk;
SENINA, R.M., inzh.; TKACHENKO, K.M., kand. tekhn.nauk.

Peat bitumens in molding compounds for precision casting. Torf. prom.
35 no.6:3-6 '58. (MIRA 11:10)

1.Moskovskiy torfyanoy institut. (for Rakovskiy, Rivkina). 2.Nauchno-
issledovatel'skiy institut liteynogo mashinostroyeniya (for Senina,
Tkachenko).

(Precision casting) (Bitumen)

RIVKINA Kh. I.

МЕХАНИЗМ ТЕРМИЧЕСКОЙ ДЕСТРУКЦИИ
И СИНТЕЗА КОКСА
Л.А. Бондарева, Р.К. Павловская
Л.А. Бондарева, Р.К. Павловская, Л.М. Павлов

VIII Mendeleev Congress for General and Applied Chemistry in
Section of Chemistry and Chemical Technology of Fuels,
publ. by Acad. Sci. USSR, Moscow 1979

abstracts of reports scheduled to be presented at above mentioned congress,
Moscow, 15 March 1979.

Biological
USSR / General and Specialized Zoology - Insects

0-7

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 23201

Author : Kakovskiy, V.E., Rivkina, Kh.I., Kotkovskiy, A.P.

Inst : Not Given

Title : Peat Carbolineum.

Orig Pub : Tr. Mosk. torf. in-ta, 1955, No 3, 175-180

Abstract : Peat carbolineum is prepared on a base of distillation products of peat tar, which is a by-product of gas production (in gas-generating stations treating peat). Phenols, neutral peat oils, and especially pyridine bases are the toxic and antiseptic tar distillates. A sample of carbolineum, prepared from a base of peat acid oils, proved most effective in sprays against plant lice of all species and currant mite, and also in spraying soils against onion flies. Differing from coal tar, the peat carbolineum does not produce plant burns and does not contain multiple-ring aromatic hydrocarbons. It can be obtained in large quantities, since in distilling peat tars, 15-17% of acid peat oils of a high boiling point are produced.

Card : 1/1

RAKOVSKIY, V. Ye.; RIVKINA, Kh. I.; KONONTSEVA, T. D.; BENYUSHEVICH, S. I.

Physical and chemical properties of peat pitch and the possibility
of using it to produce waterproofing materials. Trudy Inst. torf.
AN BSSR no. 2:160-172 '53. (MLRA 8:11)
(Peat industry--By-products)

RAKOVSKIY, V.Ya., doktor tekhn.nauk; RIVKINA, Kh.I., kand.tekhn.nauk;
KUNIN, A.M., kand.tekhn.nauk; ~~MAYZENBERG, M.M.~~, inzh.

Peat bakelites in the manufacture of sawdust boards. Torf.
prom. 36 no.8:8-12 '59. (MIRA 13:3)

1. Kalininskiy torfyanoy institut (for Mayzenberg).
(Peat) (Phenol condensation products)

RAKOVSKIY, V. Ye.; RIVKINA, Kh. I.

Development of the technology for producing creolin from creosote oils. Trudy Inst. torf. AN BSSR no. 2:146-152 '53. (MLRA 8:11)

1. Chlen-korrespondent Akademii nauk BSSR (for Rakovskiy)
(Creolin)

RAKOVSKIY, V. Ye.; RIVKINA, Kh. I., kandidat tekhnicheskikh nauk; ISAYEVA, A. I.,
kandidat tekhnicheskikh nauk

Investigation of the bactericidal and disinfectant properties of
creolin extracted from creosote oils. Trudy Inst. torf. AN BSSR
no. 2:153-159 '53.

(Creolin) (Bactericides)

(MIRA 8:11)

RUSSIA, Vol. 1.

Peat

"Yield of coke as a new index of the quality of peat." Torf. prom. 29 no. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 1953, Uncl.

RAKOVSKI, V. YE., REVKINA, KH. I.

Peat

Losses of organic matter of peat through drainage of peat deposits. Shor. Nauch.
trud. inst. torfa AN BSSR no. 1, 1951.

Monthly List of Russian Accessions, Library of Congress, August 1952. UNCLASSIFIED.

RIVKINA, Kh.I., kand.tekhn.nauk; KUL'KOVA, N.V.

Problem in rating peat as a raw material in chemical industrial
processes. Torf. prom. 38 no. 3:5-8 '61. (MIRA 14:4)

1. Kalininskiy torfyanoy institut.
(Peat)

Substitution of activated peat charcoal for bone char. N. S. Kudrya and Kh. I. Rivkina. *Soviet Inventor* 14, No. 8, 6147 (1946). *Chemie & Industrie* 39, 752. Charcoal obtained by activation of peat coke with steam at 850° C., and having a grain size of 3-6 mm., possesses a higher absorbing power toward the coloring matters present in sugarhouse and refinery products than bone char. It lends itself readily to regeneration. The cost of production is lower than that of activated wood charcoal.

A Papinean Couture

450.524 METALLURGICAL LITERATURE CLASSIFICATION

CA

Peat phenols for selective refining of lubricating oils. Kh. I. Rivkina. *Trudy Vsesoyuz. Inst. Obozrazovaniya Tverf. T'osfokhimii* 1949, No. 19, 164-H; *Khim. Referat. Zhur.* 1949, No. 7, 89.—Several fractions of peat phenols were used for selective refining of lubricating oils according to the Duval method. The fractions used were: 172-200° and their critical soln. temps. were: 40 (I), 60.0 (II), 61.1 (III) and 17.7° (IV). To obtain a critical soln. temp. of 30.0° (corresponding to that of standard solvents) the fractions were blended in the following ratios: IV 33 and III 67%; IV 15 and I 85%; IV 50 and II 44%. The amt. of the solvent was 200% of the amt. of oil. The color, η const., coke residue and yields of lubricating oil obtained by refining with these mixts. were equal to those of lubricating oils refined with standard solvents. W. R. H.

22

CIA-RDP86-00513R0014449

C.A.

21

The nature of the mechanical strength of peat. V. E. Rakovskii and Kh. I. Rivkina. *Torfyannaya Prom.* 27, No. 1, 29-30 (1950). It has been experimentally established that not only humic materials but also hydrolyzed carbohydrate products, having a sizing and cementing action, are present in peat. It has been established that the conversion of high-mol.-wt. acids in peat into bivalent (Ca) salts and trivalent (Fe and Al) salts contributes to the decreased sizing action of these materials. Lower peat has poorer mech. strength than upper peat owing to a predominance of salts in the lower layers and of free compds. in the upper layers.
Marshall Sittig

PROCESSING AND PROPERTY INDEX																									
<p>CA</p> <p>The possibility of obtaining of carbonaceous sorbents from lower strata of peat. Kh. I. Rivkina. <i>Torfyany Prom.</i> 1943, No. 1, 15-18.—Air-dried peat, in particles 5-7 mm. long and 2-3 mm. in diam., was carbonized in a porcelain tube within a vertical elec. furnace at 840-800°, depending on the ash content. During heating to 800°, illuminating gas was passed through the tube; this was discontinued between 800° and 840°, and after 10 min. at 840-800° CO₂ was passed through the tube for 15 min. The carbonized peat was cooled, passed through a sieve of 600 meshes per sq. cm., and its adsorptive power for phenol was detd. In subsequent expts. the peat was treated as above, then the coking finished at 835°. Slightly active peat coke adsorbs less than 0.03 g. of phenol per g.; medium active, around 0.05; and active, 0.07 and more. The adsorptive capacity was detd. on freshly prepd. material, then after 14, 28, 42 and 90 days. Most of the aging occurs within 14 days. The difference in the adsorption capacity of coke from various peats depends to a certain extent on the botanical differences of the parent material. If the ratio of Fe₂O₃ + CaO to SiO₂ + Al₂O₃ in the ash is less than 1, the coke is practically non-absorbent; if it is 1-2, the coke is little absorbent coke; it is more than 2 for the most absorbent cokes. Details of procedure are given. M. Housh</p>																									
<p>ASTM-S-6 METALLURGICAL LITERATURE CLASSIFICATION</p>																									

Peat coke as a reducing agent and carburizer. Kh. I
Rykhina. *Zh. Prikladn. Khim.* 1939, No. 7, 25-6. Peat
coke can be used as a reducing agent in the melting of
glass and as a carburizer instead of wood charcoal.
A. A. Podkovny

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
<div style="float: left; width: 10%; font-size: 2em;">CA</div> <div style="float: right; width: 10%; font-size: 2em;">17</div> <div style="clear: both;"></div> <p style="text-align: center;">PROCESSES AND PROPERTIES INDEX</p> <p>Antiseptic properties of peat acid oils. K. I. RIVKHA. <i>Trudy Instora</i> 1939, No. 10, 152-4; <i>Khim. Referat. Zhur.</i> 1940, No. 4, 83.—Peat acid oils are used as antiseptics and to produce disinfecting and medicinal preps. Peat phenols and lysols prepd. from them are equal to pure phenols and medicinal lysols in their bactericidal properties. Creolins with a lower content of phenols can be used in agriculture against plant pests. W. R. Henn</p>																																																			
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION																										E-277-577-577-577																									
1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									

Manufacture of calcium carbide from peat coke Kh
I. Rivkina and P. A. Moskin. *Zh. Fizichesk. Ind.*
1937, No. 3, 16-20. Peat coke, contg. moisture 4.6%,
ash 4.75, volatile substances 12.00, S 0.2, and P 0.12%,
gave CaC_2 in better yield and quality than did gas coke
A. A. Podgorny

CA

7

Carburizing agents from peat. Kh. I. Rivkina. *Forj-
snyay Prom.* 24, No. 5, 30-2(1947). Peat coke gave
satisfactory results in carburization of steel. M. S.

CA

1

The use of peat coke in cupola furnaces. Kh. I. Rivkina. *Tekhnicheskaya Prom.* 20, No. 5, 20 (1943). Generally peat coke is too finely divided, too reactive, and insufficiently strong for use in the cupola. A cupola was charged successively with (1) metallurgical coke, (2) metallurgical coke 65, peat coke 35%, (3) metallurgical coke 50, peat coke coated with a 1:1 mixt. of powd. CaO and water (to decrease the reactivity of the peat coke) 50%, (4) metallurgical coke 32, coated peat coke 68%. Throughout the heat the temp. did not drop; the exhaust gases after the 4th charge were 65° higher than after the 1st. The CO content of the gases rose by 1.5%. Overall increase in fuel consumption was 1.5-2%. M. Hosh.

ASAC 514 METALLURGICAL EXPERIMENT CLASSIFICATION

VOSEKRENSKAYA, N.T.; ZVEREVA, N.M.; RIVKINA, L.L.

Spectrochemical determination of gold in silicate rocks and minerals. Zhur. anal. khim. 20 no.12:1288-1298 '65.

(MIRA 18:12)

I. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
Submitted May 15, 1964.

RIVKINA, L.V.

Successful treatment of certain blood diseases with vitamin B. Zdrav.
Belor 5 no.3:57-58 Mr '59. (MIRA 12:7) 12

1. Otdelencheskaya bol'nitsa st. Gomel' Belorusskoy zh. d. (Nachal'nik
bol'nitsy A. I. Tyufyayeva).
(BLOOD--DISEASES) (CYANOCOBALAMINE)

CA

1st and 2nd orders

PROCESSES AND PROPERTIES INDEX

1st and 2nd orders

Acid-resistance of asbestos. V. V. SHREYAGIN AND M. A. RYKINA. *Mineral. Zhur's* 8, 849-53 (1931). -- Only the hornblende asbestos, and particularly the crocidolite and amosite of South Africa, is considered acid resisting, while the chrysotile asbestos, the principal variety of the trade asbestos mined in Canada and Russia, is completely non-resistant to acids (Hintze, *Handbuch der Mineralogie*, 781; Dana, *The System of Mineralogy*, 609).

CHAS BLANC

OPEN

MATERIALS INDEX

AS - S-LA METALLURGICAL LITERATURE CLASSIFICATION

1st and 2nd orders

1st and 2nd orders

CA 20

Protective layer on concrete. E. N. Kitayev, M. A. Rivkina and S. M. Solodovnik. Russ. 41,128, Jan. 31, 1985. Concrete is made impermeable to water, crude oil, lime satn. was developed from practical experience, that of L. from purely scientific considerations. General adoption of the latter formula, CaO standard = 2.8 SiO₂ + 1.18 Al₂O₃ + 0.65 Fe₂O₃, is suggested. A. E. B.

ASAC 51.4 METALLURGICAL LITERATURE CLASSIFICATION

RIVKINA, M.A.

"On the Work of the Spectroscopic Laboratory of the State Institute of Rare Metals," In. Ak. Nauk SSSR. Ser. Fiz., No. 1, 1940.

Mem., State Sci. Res. Inst. Rare & Light Metals, Moscow, -1940-.

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES																										1ST AND 2ND ORDERS																									
CA																										7																									
<p>Work of the Spectroscopic Laboratory of the State Institute of Rare Metals. M. A. Rivkina. <i>Bull. acad. sci. U. R. S. S., Ser. phys.</i> 4, 108-9 (1940).—The spectroscopic method for rapid detn. of such elements as Tl, In, Ga and Ag in solns. in which a no. of other elements are present was quite successful. The acetylene flame in the air was used as a source of excitation, and the method of homologous pairs was used. Roksalana Gamow</p>																																																			
<p>ASB S.L.A. METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

CIA-RDP86-00513R0014449

RIVKINA, M. A.

Cand. Tech. Sci.

Dissertation: "Spectrum Analysis of Cesium Mineral Raw Material and Finished Products of Cesium Chloride Production." All-Union Sci Res Inst of Mineral Raw Materials, 1 Oct 47.

SC: Vechernyaya Moskva, Oct, 1947 (Project #17836)

A

7

Spectroanalytical determination of rare alkali metals in minerals with the aid of a flame. M. A. Rivkina and A. K. Rusanov. *Izvest. Akad. Nauk S.S.S.R. Ser. Fiz.* 12, 407-70 (1949).—In a C_2H_2 -air flame, lines of the alkali metals in pollucite (Ca, Rb, Na, Li, K), $(Si_2Al_2O_7) \cdot H_2O$ appear only if the sample is fused with $Na_2CO_3 + 20\% Na_2B_4O_7$. Rb is conveniently detd. against In as standard, by the line pairs Rb 4201.8-In 4101.0, for Rb 0.07-2.0%; mean probable error 4.1%. For Cs 0.06-5.0%, by Cs 4535.3-In 4511.5 A., error 4.0%; and for Cs 0.18-5.0% by Cs 4593.2-In 4511.5, error 3.7%. N. Thon

RIVKINA, M.A.

Spectrum analysis of tin in ores. Zav. lab. 21 no. 4:459-460 '55 (MLRA 8:6)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001

1. Tsentral'nyy nauchno-issledovatel'skiy institut olovyanoy promyshlennosti. (Tin ores--Analysis)

K-7

Category : USSR/Optics - Optical methods of analysis. Instruments

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 2520

Author : Rivkina, M.A., Pisarev, V.D., Kornilov, A.V., Kostrova, Z.P., Kotel'nikova,
L.A., Levchenko, M.P.

Inst : Novosibirsk Inst. of Railroad Transport Engineers and Novosibirsk Tin
Plant, USSR

Title : Spectral Analysis of Tin

Orig Pub : Zavod. laboratoriya, 1955, 21, No 9, 1081-1083

Abstract : Description of a method for the spectral analysis of tin of various grades with impurities of Cu, Pb, As, Sb, Bi, and Fe. Standard samples for the determination of Bi, Pb, Sb, and Cu were obtained by diluting the dual alloys (one of these elements and tin) in pure tin. Standards for As and Fe were prepared separately. A description of the analysis procedure is given. The mean arithmetic error in the determination of the impurities in the tin does not exceed ± 7 -- 9%. The analysis of a single sample for six elements lasts 50-60 minutes.

Card : 1/1

MOZHEYKO, Igor' Vsevolodovich L. UZYANOV, A.N., otv. red.; RIVKINA, O.S., red.

[Not only memory...: story about a trip to Burma] Ne tol'ko
pamiat'..., rasskaz o voimennom puteshestvii v Birmu. Moskva,
Nauka, 1969. 154 p. (MIRA 18:9)

GOLANT, Sh., kand.tekhn.nauk; RIVINA, R., inzh.; USVIATSOVA, B., inzh.

Use of plastics in the major repair of buildings. Na stroi. Ros.
3 no.1:20 Ja '62. (MIRA 16:5)

(Apartment houses—Maintenance and repair) (Plastics)

ROGUTVA, O.K. [deceased]; LIBINA, S.L.; RIVKINA, Ye.G.

Syntheses of 3,4-epoxy-2,5-endomethylene-1,2,5,6-tetrahydrobenzyl
ether of 3,4-epoxy-2,5-endomethylene, 1,2,5,6 tetrahydrobenzyl
solid. Plast. massy no. 3855-56 '65. (MIRA 1886)

L 01151-66 EWT(m)/EPF(c)/ENP(j)/T RM

3

ACCESSION NR: AP5022002

UR/0286/65/000/014/0076/0077
678.644

AUTHOR: Gosteva, O. K. (deceased); Utyanskiy, Z. S.; Pesin, L. M.; Runova, I. M.; Rivkina, Ye. G.; Chefranova, E. K.; Zotkovskaya, L. A.; Tsinman, F. Ye.

TITLE: A method for producing epoxy resins. Class 39, No. 172987

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 14, 1965, 76-77

TOPIC TAGS: synthetic material, epoxy plastic, phenol

ABSTRACT: This Author's Certificate introduces a method for producing epoxy resins hardened by anhydrides of unsaturated dicarboxylic acids. Epichlorohydrin is interacted with a phenol in an alkaline medium. Resins with high thermal stability are produced by using dimethylvinylenthylnphenol or cresols or xlenols as the phenol.

ASSOCIATION: Moskovskiy nauchno-issledovatel'skiy institut plastmass (Moscow Scientific Research Institute of Plastics)

SUBMITTED: 19Feb64

ENCL: 00

SUB CODE: MT

NO REF SOV: 000

OTHER: 000

Card 1/1 DP

L 44372-60 EMT(m)/EMP(j)/T/EMP(v) IJP(c) RM/R
 ACC NR: AP6023058 (A) SOURCE CODE: UR/0191/66/000.004/0008/0009
 AUTHOR: ^(DECEASED) Gosteva, O. K.; Utyanskiy, Z. S.; Runova, S. M.; Rivkina, Ye. G.; Tsinnman, F. Ye.
 ORG: none
 TITLE: Epoxy resins based on phenols with vinylacetylene type substituents
 SOURCE: Plasticheskiye massy, no. 4, 1966, 8-9
 TOPIC TAGS: epoxy plastic, phenol, phenolic plastic, vinyl plastic, IR spectrum, adhesive
 ABSTRACT: An epoxy resin was synthesized from epichlorohydrin and dimethylvinylacetylenephénol. The reaction product, distilled at 168-169°C at 3.5 mm Hg and crystallized from alcohol, has a melting point of 42-48°C and contains 17% epoxy groups. The structure of the epoxy resin was confirmed by the IR spectrum. The epoxy resin was hardened using maleic anhydride (85% based on epoxy groups) and benzoyl peroxide (1% based on resin). The hardened resin exhibited a constant mechanical strength (12 kg/cm² at $\tau=10$ sec) in the 20-300°C interval and excellent adhesive properties (shear strength of the steel-steel joint was 120 kg/cm² and of the aluminum-aluminum joint was 79 kg/cm²). Orig. art. has: 2 figures, 2 formulas.
 SUB CODE: 11/ SUBM DATE: none
 UDC: 678.643'42'5
 Card 1/1 hs

RIVKINA, Ye.M.

Comparison of the speed of growth of polynomials and of the
maxima of their moduli. Sib.mat.zhur. 3 no.3:409-417 My-Je
'62. (MIRA 15:9)
(Polynomials) (Sequences (Mathematics))

RIVKINA, Ye.O., kand. med. nauk; KROMICH, N.A.; LUKINA, M.A.

Immediate and late results following the application of cor-
neal and scleral sutures in case of penetrating eye injuries.
Oft. zhur. 18 no.7:393-397 '63 (MIRA 17:4)

1. Iz Leningradskoy gorodskoy glaznoy bol'nitsy.

RIVKINA, Ye.O., kand. med. nauk

Transplantation of cornea for therapeutic purposes. Oft. zhur.
18 no.4:215-219 '63 (MIRA 17:4)

1. Iz Leningradskoy gorodskoy glaznoy bol'nitsy.

Handwritten: RIVKINA, Ye.O.
RIVKINA, Ye.O., kandidat meditsinskikh nauk

Use of hemostatic blood preparations in eye surgery. Oft. zhur. 12
no.2:86-90 '57. (MIRA 10:11)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta glaznykh
bolezney imeni prof. Girshmana (direktor - prof. B.P.Kalashnikov)
i Leningradskogo ordena Trudovogo Krasnogo Znameni nauchno-isse-
dovatel'skogo instituta perelivaniya krovi.
(EYE--SURGERY) (HEMOSTATICS)

RIVKINA, Y. O.

"Prophylaxis of Gonoblenorrhea with Penicillin," Vest. Oftalmol., 28, No. 2, 1949.

Mbr., Leningrad State Sci. Res. Inst. Eye Diseases, Im. Girshman, -c1949-.

RIVKIND, H.

M

*The Galvanizing of Pipes While Hot. A. Rivkind (*Novosti Tekhniki (Tech. News)*, 1938, 7, (1), 28; *Chem. Zentr.*, 1938, 188, (III, 4123). -- [In Russian.] In the new process, the depth of the zinc bath is increased to 200 mm. In order to be certain that the inner surface of the pipes or tubes is coated, the latter are first dipped in a zinc chloride solution. For production of a coating that will not chip or peel, the pipes must not be left in the zinc bath longer than 5 minutes. They are then washed in hot water.

7

RIVKIND, A. I.

Metals, Powdered

Absolute measurements of paramagnetic absorption in certain powders at a 10^7 Hz frequency of the oscillating field. Izv. AN SSSR. Ser. Fiz. 16, no. 5, 1952/

Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

RIVKIN, A. I.

"Absolute Measurements of Paramagnetic Absorption in a Field Oscillating at a Frequency of 107 Cycles"

Izv. Kazanskogo Fil. AN SSSR, Ser. Fiz.-Mat. i Tekhn. n., No 3, 1953, 44-53

Describes a heterodyne method for measuring the absolute magnitude of the imaginary part of complex paramagnetic susceptibility. (RZhKhim, No 14, 1954)

SO: Sum. 492. 12 May 55

Ryvkind, A. I.

USSR/Nuclear Physics - Proton resonance

FD-738

Card 1/1 : Pub 146-8/22

Author : Kozyrev, B. M. and Ryvkind, A. I.

Title : Proton resonance in solutions of paramagnetic salts

Periodical : Zhur. eksp. i teor. fiz., 27, 69-74, Jul 1954

Abstract : Proton resonance absorption in aqueous solutions of paramagnetic salts is analyzed. Obtained data are used for computation of effective magnetic moments characterizing the effect of paramagnetic ions on the shortening of the proton relaxation time. Molecular motion essentially acts on the relaxation mechanism of proton resonance in solutions. This is particularly noticeable in complex paramagnetic ions and may be applied to the explanation of their structure. 3 references, including 2 foreign.

Institution : Physicotechnical Institute, Kazan Affiliate, Acad. Sci. USSR

Submitted : January 8, 1954

RIVKIND, A.I.

USSR/Chemistry - Physical chemistry

Card 1/1 : Pub. 22 - 25/44

Authors : Kozyrev, B. M., and Rivkind, A. I.

Title : Complex formation in solutions investigated by the proton resonance method

Periodical : Dok. AN SSSR 98/1, 97-98, Sep 1, 1954

Abstract : The use of the proton resonance phenomenon, as a method of studying the complex ion formation in solutions (paramagnetic salt solutions), is debated. The effect of complex formation on the proton resonance was determined. The relative intensity of the proton resonance lines were measured at conditions of partial saturation as a function of the paramagnetic concentration in the solution. Two USA references (1948 and 1952).

Institution : Acad. of Sc. USSR, Kazan Branch, Physico-Technical Institute

Presented by : Academician A. E. Arbuzov, April 8, 1954

WORKING, A.I.

Study of complex formation in solutions by the proton-resonance method. A. I. Rivkind (Phys. Tech. Inst., Kazan). *Doklady Akad. Nauk S.S.S.R.* 100, 933-6(1955). 62

The strong effect that complex ions produce on the magnetic resonance of protons in aq. solns. of paramagnetic salts was utilized in the study of the complex-formation process. All measurements were made at room temp. in the magnetic field of 1.000×10^7 oscillations/sec. In accordance with the theory of N. Bloembergen, *et al.* (C.A. 42, 4840g), the square of the effective magnetic moment μ_{eff}^2 was taken as characteristic of this process. Its values for Fe^{3+} , $[FeF_6]^{3-}$, $[Fe(C_2O_4)_3]^{3-}$, $[Fe(H_2C_2O_4)_3]^{3-}$, Cu^{2+} , $[Cu(NH_3)_4]^{2+}$, $[Cu(C_2O_4)_2]^{2-}$, and $[Cu(HC_2H_3O_2)_2]$ were 34.8, 17.4, 8.3, 4.0, 4.22, 2.3, 1.0, and 0.47, resp. In the process of complex-formation μ_{eff}^2 decreases with increase in the coordination no. Statistical change of the magnetic moments of Fe^{3+} and Cu^{2+} was negligibly small in comparison with the values of μ_{eff}^2 , and thus had no effect on the above relation. From the plots of μ_{eff}^2 vs. concn. (mol./l.) the instability const. K was readily detd. For example, for the complex $[Cu(NH_3CH_2COO)]^+$, $K = [Cu^{2+}]/[Cu(NH_3CH_2COO)]^+$. ($K_{acid}[NH_3CH_2COOH]/[H^+]$), where K_{acid} is the disocn. const. of NH_3CH_2COOH ($K_{acid} = 1.15 \times 10^{-4}$). The av. value for K was 6.5×10^{-3} , which is in complete agreement with the results obtained by another method (Yatsimirskii, C.A. 47, 9341f). Complex formations can be followed directly by the proton-resonance method. A. P. K.

Proton relaxation and near order in paramagnetic solutions. A. I. Rivkind (Phys. Tech. Inst., Kazan Branch Acad. Sci. U.S.S.R.). *Doklady Akad. Nauk S.S.S.R.* 102, 1107-13 (1955); cf. *C.A.* 47, 4672a; 49, 6725c. —The theory advanced by N. Bloembergen, *et al.* (*C.A.* 42, 4849g) is limited to solns. with a brief period of electron paramagnetic relaxation $\rho < 10^{-11}$. Solns. with a ratio of longitudinal T_1 over transverse T_2 relaxation time larger than 1 are not "anomalous" and cannot be explained by compd. formation (cf. J. R. Zimmerman, *C.A.* 48, 12485e). Exptl. result can be accounted for more completely if it is assumed that an atm. of the solvent (1 mol. thick) surrounds the paramagnetic ion so that its motion in reference to this atm. ("near order") is smaller than in reference to the bulk of the soln. affecting the quanta of the electron spin in relation to the static magnetic field. This is not unlike the theory of diamagnetic nuclear spin in a cryst. lattice (cf. N. Bloembergen, *C.A.* 43, 8273c) with the exception that thermal vibration replaces diffusion processes. The following exptl. data are presented in support of this postulate (compd.,

CH
concn. range in moles/l., and T_1/T_2): VOSO_4 , 1.0-1.6, 16.5; MnSO_4 and MnCl_2 , —, 8.8; $\text{Cr}(\text{NO}_3)_3$ (violet), 0.3-0.5, 3.5; CrCl_3 (green), 0.5-0.6, 1.2; $\text{FeNH}_4(\text{SO}_4)_2$, 0.3, 1.2; CuSO_4 , 1.0-1.2, 1.2. In aq. glycerol solns. of Cu^{++} , VO^{++} , and Mn^{++} T_1/T_2 (T_1 is T_1 in aq.-glycerol solns.) increases with the viscosity η , whereas with Fe^{++} , Co^{++} , and Ni^{++} the effect of η on T_1 is negligible. The last solns. are characterized by a very small ρ . The same is true of Mn^{++} solns. in MeOH and EtOH (cf. B. M. Kopylov, *Doklady Akad. Nauk S.S.S.R.* 103, No. 1 (1955)); in these solns. T_1/T_2 is of the order of unity. For special cases of solns. with $\rho < 10^{-11}$ $\tau_s = \rho/2\pi$ and $1/T_1 = 4.8 \times 10^{23} \gamma^2 \mu^2 p (N/a^3)$, where γ is the proton gyromagnetic ratio, μ the static magnetic moment of the ion, and a is the distance between the proton and the paramagnetic ion at their max. approach. This equation accounts for the high values of T_1 of rare earth solns. (cf. R. L. Conger, *et al.*, *C.A.* 46, 7384h) for which small values of ρ were established by Al'tshuler (*C.A.* 49, 7804c). High values of T_1 of Mn^{++} solns. in Ac_2O are accounted for by the fact that Ac_2O even at room temp. approaches a boiling liquid in which the "near order" cannot exist.
I. Bencowitz

Small

BN

17.11.0, A.I.,

"Proton Resonance in Paramagnetic Solutions" Masan

Conference on Physics of Magnetic Phenomena,
May 1956, Sverdlovsk, USSR

Rivkind, A. I.

Distr: 4E4j/4E2c(j)/4E3d

Study of complex formation in solutions by using proton magnetic resonance. A. I. Rivkind (Phys. Tech. Inst. Branch Acad. Sci. U.S.S.R., Kazan). *Zhur. Neorg. Khim.* 2, 1203-74 (1960). A new method (C.A. 50, 1392a.) and app. was applied to the study of complex formation in Fe, Ni, and Cu solns. The compn. and instability consts. were detd. for the antipyrine complexes of Fe(III), the mono- and triethanolamine and the sulfosalicylate complexes of Cu(II), and the monoethanolamine complexes of Ni(II). The nature of the reaction of $[Cr(H_2O)_6]^{3+}$ with ligands which have a high coordination capacity (citric or ethylenediaminetetracetic acids) was studied. The exptl. results show that the magnetism of the protons of the solvent is a reliable and sensitive detector of complex formation in solns. of paramagnetic salts.

J. Ravitar Leach

PM

5
2 May

RIVKIND, A.I.

Investigating complex formation in solutions by the method of
proton magnetic resonance. Zhur.neorg.khim. 2 no.6:1263-1274 Je
'57. (MIRA 10:10)

1.Fiziko-tekhnicheskii institut Kazanskogo filiala AN SSSR.
(Solution (Chemistry)) (Complex compound) (Resonance)

AUTHOR: RYVKIND, A.I. PA - 2047
 TITLE: The Proton Relaxation in H_2O - D_2O Mixtures, which contain Paramagnetic Ions (Russian)
 PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 112, Nr 2, pp 239-240 (U.S.S.R.)
 Received: 3 / 1957 Reviewed: 3 / 1957
 ABSTRACT: For the purpose of further studying the mechanism of constant spin relaxation in the solutions of paramagnetic salts, the author carried out measurements of the longitudinal relaxation time T_1 of protons in solutions in which the content of the relaxing H^1 -nuclei changed within wide limits. This change is due to the fact that partly ordinary (light) water H_2O was replaced by D_2O . The results obtained on solutions of $MnCl_2$ with 0,003 mol/l, $Cr(NO_3)_3$ with 0,005 mol/l, $Cu(NO_3)_2$ with 0,03 mol/l and $CoSO_4$ with 0,25 mol/l are shown in a table. With an increased reduction of the concentration of the protons, the time T_0 is considerably lengthened. If in the solutions 90% of the total proton quantity are replaced by deuterons ($\alpha = 0,9$), T_1 increases by more than one order of magni-

Card 1/3

PA - 2047

The Proton Relaxation in $H_2O - D_2O$ Mixtures, which contain Paramagnetic Ions(Russian).

tude. If H_2O molecules are replaced by D_2O neither the structure of the solution nor the local magnetic fields produced by the ions undergo any greater change. Even a very considerable reduction of the concentration N of the paramagnetic ions causes no anomaly in the relaxation process. According to the author's opinion there is only one way of explaining the experiment after what has hitherto been said: The balance of the spin temperature T_s of the protons in the immediate vicinity of the paramagnetic ions is not due to the BROWN'S motion of the water molecules but to a molecular transfer (exchange) of the water ions. Adjoining protons are exchanged by continuously newly formed and stripped off hydrogen bindings. The introduction of heavy water decelerates the proton exchange, which leads to the observed increase of T_1 . Apparently the constancy of the hydrate atmosphere in the immediate vicinity of the paramagnetic ions is so great that the simple thermal transfer of molecules does not warrant a sufficient balancing of spin temperatures

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PA - 2047

The Proton Relaxation in $H_2O - D_2O$ Mixtures, which contain Paramagnetic Ions(Russian).

during the time $\lesssim T_1(10^{-2} - 10^{-4} \text{ sec})$. The lack of an effective BROWN'S translation in the first two, three layers of hydrogen molecules lying next to the ions suffices for the explanation of the observed phenomenon. Each of the four solutions investigated furnishes a curve of its own and these differences can be explained qualitatively by the difference between the concentrations used. In the case of a large number of paramagnetic ions in the solution proton exchange is bound to be of less importance, so that the relative number of protons that are in immediate interaction with the paramagnetic ions increases. The results mentioned here were obtained at room temperature and a constant magnetic field strength of $H \sim 230 \text{ Oersted}$.

ASSOCIATION: Physical-Technical Institute of the Kazan Branch of the Academy of Sciences of the USSR.

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress

Card 3/3

Rivkind, A.I.

20-3-25/52

AUTHOR: Rivkind, A. I.

TITLE: Proton Resonance in Non-Aqueous Solutions of Paramagnetic Salts
(Protonnyy rezonans v nevodnykh rastvorakh paramagnitnykh soley)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 3, pp. 448- 451 (USSR)

ABSTRACT: First, a short report is given on previous works dealing with the same topic. In these paramagnetic solutions rapid hydrogen exchange lacks either entirely, or, if it exists, only a small part of the protons of the solvent takes part in it. The following is presupposed: In such solutions the presence of an "impenetrable" "solvate" atmosphere around the paramagnetic particles must considerably prolong the relaxation time T_1 because of a considerable increase of proton-ion-distance. This was actually observed by experiment. The objects of this investigation were solutions of crystal hydrates of the paramagnetic salts of the elements of the iron group in absolute acetone and alcohol. The apparatus and the method have already been described previously (reference 1, 2) . All experiments were carried out at room temperature in a constant magnetic field with $H_0 \sim 2300$ Oersted. The most important results obtained by measurements in acetone solutions are shown in form of a diagram. This table contains the average values of the products $T_1 N$ in the

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20-3-25/52

Proton Resonance in Non-Aqueous Solutions of Paramagnetic Salts

investigated intervals of the concentrations (N -concentration of the solutions) and of the quotients $T_1/T_{1, \text{aqueous}}$. Here T_1 denotes the relaxation time in the acetone solutions, $T_{1, \text{aqueous}}$ - the relaxation time in the equimolar solutions of the same salt. In acetone the dissolved paramagnetic salts exercise a comparatively weak influence upon the relaxation of protons. The influence exercised by the salts of triple-charged ions is particularly insignificant. The dependence of the relaxation time T_1 of the protons upon the electric charge of the paramagnetic particles is a qualitatively new effect, which does not occur in the aqueous solutions of paramagnetic salts. Next, results obtained for solutions in alcohol are discussed, for which the ratio $(T_1/T_{1, \text{aqueous}})$ diminishes intensively with increasing concentration. There are 1 figure, 1 table, and 8 references, 4 of which are Slavic.

Card 2/3

20-3-25/52

Proton Resonance in Non-Aqueous Solutions of Paramagnetic Salts

ASSOCIATION: Physical-Technical Institute of the Kazan' Branch of the AN USSR
(Fiziko-tehnicheskiy institut Kazanskogo filiala Akademii nauk
SSSR)

PRESENTED: April 24, 1957, by A. Ye. Arbuzov, Academician

SUBMITTED: April 18, 1957

AVAILABLE: Library of Congress

Card 3/3

AUTHOR: Rivkind, A.I. 56-34-4-38/60

TITLE: The Relaxation of Deuterium Nuclei in Paramagnetic Solutions
(Relaksatsiya yader deyteriya v paramagnitnykh rastvorakh)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol. 34,
Nr 4, pp. 1007-1009 (USSR)

ABSTRACT: The author studied the magnetic spin relaxation of deuterium nuclei in the solutions of the salts Cr^{3+} , Mn^{2+} , Fe^{3+} and Cu^{2+} in heavy water. Measurements were carried out by a modified method of saturation curves in which the degree of nuclear saturation is varied by varying the concentration of the paramagnetic ions in the solution. All experiments were carried out at room temperature and at the frequency $\nu_0 \sim 2.6$ megacycles/sec of the oscillating field. The following is a summary of the most important results obtained by these experiments: The times of nuclear reaction for solutions of equal concentration of one and the same paramagnetic salt in D_2O and H_2O are in the ratio of: $T_{1d}/T_{1p} = (r_p^2/r_d^2)\alpha$ to each other. Here T_{1d} denotes the "longitudinal" relaxation time of the deuterons in a solution in D_2O ; T_{1p} - the same amount for protons in a

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The Relaxation of Deuterium Nuclei in Paramagnetic
Solutions

56-34-4-38/60

solution in H_2O ; γ_p and γ_d - the gyromagnetic factors of the nuclei ($\gamma_p^2/\gamma_d^2 \sim 42.4$); α - a numerical coefficient. For the solutions of the salts of Cr^{3+} , Fe^{3+} and Cu^{2+} it holds that $\alpha \sim 4.2$, where this value may be considerably lower for copper. For the solution of the salts $MnCl_2$ and $Mn(NO_3)_2$ it holds that $\alpha \sim 6.8$. The relaxation time T_1 of the deuterons increases considerably because of the formation of complexes in the solutions (by up to one order of magnitude). The water molecules of the hydrate shells of the paramagnetic ions are here replaced by other diamagnetic particles. It is, however, essential that the manganese complexes occupy no privileged position among the solutions of complex-ions. A diagram illustrates the dependence of the maximum intensity χ''_{max} of the lines of the deuteron resonance upon the molar concentration N of the paramagnetic ions in the D_2O . The amplitude of the oscillating field H_1 and the amplitude of the modulation field H_m remain unchanged. With increasing N , T_1 becomes shorter and the intensity of the lines increases tending towards the value that holds in the case of lacking saturation. The condition $T_1/T_2 \gg 1$ is characteristic of the relaxation of deuterium nuclei in paramagnetic solutions; here T_2 denotes "transversal"

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The Relaxation of Deuterium Nuclei in Paramagnetic Solutions

56-34-4-38/60

relaxation time. The experimental data found indicate the following: Broadening of the lines depends on the shifting of spin levels of the nuclei as a result of the interaction of the quadrupole momentum of the deuterons with the gradient of the electric field caused by the paramagnetic ion. As the anomaly of the manganese solutions ($\alpha \sim 6,8$) vanishes during transition to complex ions, it is most probably connected with the character of the hydration of the ions Mn^{2+} in D_2O . The bindings between the water molecules of the hydrate shell and the paramagnetic ion are probably slightly covalent. The lack of covalence weakens the magnetic interaction between the central ion and the deuteron nuclei of the first sphere of coordination, which leads to a prolongation of T_1 . There are 1 figure and 7 references, 5 of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskii institut Kazanskogo filiala Akademii nauk SSSR (Institute of Physics and Technical Engineering of the Kazan' Branch, AS USSR)

SUBMITTED: January 3, 1958

Card 3/3 1. Deuterium--Nuclear reactions 2. Solutions--Magnetic properties

5(4)

AUTHOR:

Rivkind, A. I.

SOV/78-4-6-13/44

TITLE:

II. The Covalent Bonds With Respect to the 3d-Orbits of the Central Ion (II. Kovalentnyye svyazi s vovlecheniyem 3d-orbit tsentral'nogo iona)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 6, pp 1291-1299 (USSR)

ABSTRACT:

The complex formation process in aqueous solutions of iron (III) with salicylic acid, sulfo-salicylic acid, and para-amino-salicylic acid was investigated by the method of the magnetic resonance of the protons. The figures 1 - 4 show the course of the complex formation process in the aqueous phase. It was found that the complex formation process iron (III) - aromatic acid proceeds in all three cases equally, under the formation of complexes with equal structure. In the second stage of the complex formation a covalent bond occurs between the central ion of the iron (III) and the addend. The 3d-orbit takes part in this bond. The covalent bonds with the participation of the 3d-orbit in the complex ions Fe (III), Cr (III), Ni (II), and Cu (II) at 20° in aqueous phase are given in table 1. The results given in table 1

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SOV/78-4-6-13/44

II. The Covalent Bonds With Respect to the 3d-Orbitals of the Central Ion

show that in the case of the complex formation in stages the 3d-orbit takes only part in the complex formation if four or six places of coordination in the inner sphere of the central ion are occupied. The instability constants of the salicylates, sulfo-salicylates, and para-amino-salicylates of the iron (III) complex were determined and the results given in table 2. $pK_1 = 14.9$, $pK_2 = 10.8$, and $pK_3 = 7.4$ were detected for the sulfo-salicylic acid complexes of Fe (III); $pK_1 = 16.3$, $pK_2 = 12.3$, and $pK_3 = 7.4$ for the salicylic acid complexes of Fe (III); and $pK_1 = 18.1$, $pK_2 = 14.3$, and $pK_3 = 7.3$ for the para-amino-salicylic acid complexes of Fe (III). The method of the magnetic resonance of the protons for the investigation of the complex formation in the solutions has a universal character. There are 4 figures, 2 tables, and 15 references, 7 of which are Soviet.

ASSOCIATION: Kazanskiy filial Akademii nauk SSSR Fiziko-tekhnicheskii Institut (Kazan' Branch of the Academy of Sciences USSR Physico-technical Institute)

SUBMITTED: June 16, 1958
Card 2/2

SOV/20-127-5-31/58

5(4)

AUTHORS: Kozyrev, B. M., Rivkind, A. I.

TITLE: Paramagnetic Resonance in Solutions of Complex Copper Salts

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 5, pp 1044-1046 (USSR)

ABSTRACT: Microwave spectra were recorded of solutions of acetyl acetate-, nitrate-, ethanolamine-, and diethanolamine complex salts of Cu(II) with the frequencies of $\nu_1 = 9392$ and $\nu_2 = 1569$ megacycles (Fig 1). In transition from frequency ν_1 to frequency ν_2 , the hyperfine structure of the spectrum varies in accordance with the relaxation theory by H. M. McConnell (Ref 2). Table 1 gives the g-factors for the hyperfine structure of the investigated spectra. The deviation of data from the values found by B. R. McGarvey (Ref 1) for acetyl acetate is explained by the fact that McGarvey produced his solutions from solid, waterfree acetyl acetate, whereas the authors proceeded from the nitrate $\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$, and their solutions therefore contained remains of crystal water. The dipole in-

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SOV/20-127-5-31/58

Paramagnetic Resonance in Solutions of Complex Copper Salts

fluence of the H_2O -molecule could be proved; it corresponded to theoretical expectations. Further, the influence exercised by the correlation time τ_c (Ref 2) upon the shape of the spectrum was investigated. By the addition of diamagnetic ions ($LiCl$) additional electrical "friction" was produced, and a noticeable increase of spectrum asymmetry was attained. What has not been explained is the phenomenon that the aqueous solution of the ethanolamine complex in a concentration of 1.2 mol/l at a frequency of ν_1 shows one single line, the width of which is by 30-40% narrower than the full width of the hyperfine structure spectra of diluted solutions. The authors thank K. A. Valiyev for expressing his opinion on the work performed. There are 1 figure, 1 table, and 4 references, 1 of which is Soviet.

ASSOCIATION: Kazanskiy filial Akademii nauk SSSR (Kazan' Branch of the Academy of Sciences, USSR)

PRESENTED: April 8, 1959 by A. Ye. Arbuzov, Academician

SUBMITTED: April 4, 1959

Card 2/2

S/020/60/135/002/027/036
B004/B056

AUTHOR: Rivkind, A. I.

TITLE: Association of Complex Copper Ions in Solutions.
Investigation by the Method of Paramagnetic Resonance

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 2,
pp. 365-368

TEXT: When investigating the electron paramagnetic resonance (epr) spectra of complex copper ions, the author found an anomalous behavior. The present paper deals with the explanation of this anomaly. Fig. 1 shows epr oscillograms taken at $\nu_0 = 9395$ Mc/sec and room temperature for the monoethanolamine complexes CuEtm_3^- ($\text{Etm}^- = \text{NH}_2\text{CH}_2\text{CH}_2\text{O}^-$) dissolved in alcohols (concentration, 0.15 M). The narrow signal on the left side of the curves is the signal of the free radical of α, α -diphenyl- β -picryl-hydrazyl, which was used to calibrate the constant magnetic field H_0 . The following dependence on the solvent is observed: The epr spectrum of the solution in methanol as represented in Fig. 1a, shows exchange peaks

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Association of Complex Copper Ions in
Solutions. Investigation by the Method of
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S/020/60/135/002/027/036
B004/B056

(↓) on transition to solvents with a low dielectric constant ϵ
(16 : ethanol; 18 : propanol; 11 : isopropanol; 10 : butanol; 1e:
benzyl alcohol). The peaks are explained by the formation of associates
from at least two complex ions. If the dielectric constant of the methanol
solution is lowered by the addition of ether, also exchange peaks (1w) will
occur. The fact that in the transition from i-propanol to butanol and
benzyl alcohol the exchange peaks become weaker although ϵ decreases, is
explained by the increasing viscosity of the solvent, which delays
association. Mutual polarization is assumed for equally charged complex
ions approaching each other during association. However, the experimental
data are not yet sufficient for a definite explanation. Similar association
phenomena were observed when solvents with small ϵ were added to an
aqueous solution of $0.15 \text{ M Cu(NH}_3)_4^{2+}$ or of the copper ethylene diamine
complex. The exchange peaks increase with an increase of concentration,
as the latter increases the probability of association. As the anomaly of
the epr spectrum appears whenever the frequency ν_c of the Brown rotation

Card 2/4

Association of Complex Copper Ions in
Solutions. Investigation by the Method of
Paramagnetic Resonance

S/020/60/135/002/027/036
B004/B056

of the complexes becomes smaller than the Larmor frequency ν_0 , the conclusion is drawn that the association observed is preceded by a decrease of ν_c . With a decrease of ϵ , associates are formed which hamper the Brown rotation. As soon as the lifetime of these associates becomes longer than the reciprocal value of the Larmor frequency ($1/\nu_0 \sim 10^{-10}$ sec), an interaction takes place and the hyperfine structure shows exchange peaks. There are 3 figures and 3 references: 1 Soviet, 1 US, and 1 British. ✓

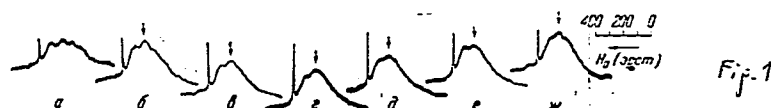
ASSOCIATION: Fiziko-tekhnicheskiy institut Kazanskogo filiala Akademii nauk SSSR (Institute of Physics and Technology of the Kazan' Branch of the Academy of Sciences USSR)

PRESENTED: June 1, 1960 by A. Ye. Arbuzov, Academician

SUBMITTED: May 26, 1960

Card 3/4

S/020/60/135/002/027/036
B004/B056



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Card 4/4

MAZITOV, R.K.; RIVKIND, A.I.

Nuclear relaxation in vanadyl salt solutions. Dokl. AN SSSR 166
no. 3:654-657 Ja '66. (MIRA 19:1)

1. Kazanskiy gosudarstvennyy universitet im. V.I. Ul'yanova-Lenina
i Kazanskiy fiziko-tekhnicheskiy institut AN SSSR. Submitted
May 25, 1965.

RIVKIND, A.I.; KUTNETSOVA, L.P.

Breakdown of the hydrate shells of vanadyl iond under the effect of the electrostatic field of diamagnetic ions. Study by the electron paramagnetic resonance method. Dokl. AN SSSR 164 no.4:86C-863 0
'65. (MIRA 18:10)

1. Kazanskiy fiziko-tekhnicheskii institut AN SSSR. Submitted March 22, 1965.

RIVKIND.A.I.

Nuclear relaxation and the structure of solutions of vanadyl salts. Zhur.strukt.khim. 4 no.5:664-673 S-0 '63. (MIRA 16:11)

1. Fiziko-tekhnicheskiy institut Kazakhskogo filiala AN SSSR.

RIVKIND, A.I.

Effect of acidity on the exchange interaction of electron spins
in vanadyl salt solutions. Dokl. AN SSSR 145 no.5:1075-1076
'62. (MIRA 15:8)

1. Fiziko-tekhnicheskiy institut Kazanskogo filiala AN SSSR.
Predstavleno akademikom A.Ye.Arbuzovym.
(Vanadyl compounds--Spectra) (Acids) (Electrons)

RIVKIND, A.I.

Paramagnetic resonance in solutions of complex copper salts. Determination of the characteristic parameters of the Brownian rotation of complexes. Zhuravskiy, Khim. 2 no.3:369-370 My-Je '61. (MIRA 15:1)

1. Fiziko-tekhnicheskiy institut krasnoyarskaya filiala AN SSSR.
(Copper compounds--spectra)
(Paramagnetic resonance and relaxation)

RIVKIND, A. I.

Properties of the $V = O$ multiple bond in vanadyl ions. Dokl.
AN SSSR 143 no.6:1403-1405 Ap '62. (MIRA 15:4)

1. Fiziko-~~tekh~~nikheskiy institut Kazanskogo filiala AN SSSR.
Predstavleno akademikom B.A.Arbuzovym.
(Vanadyl ion) (Chemical bonds)

KOZYREV, B.M.; RIVKIND, A.I.

Nature of widening of superfine components in electron paramagnetic resonance spectra of paramagnetic solutions. Zhur.strukt.khim.
3 no.1:95 Ja-F '62. (MIRA 15:3)

1. Fiziko-tekhnicheskiy institut Kazanskogo filiala AN SSSR.
(Paramagnetic resonance and relaxation)
(Electrolyte solutions--Spectra)

RIVKIND, A.I.

Nuclear relaxation in vanadyl salt solutions. Formation of
hydrogen complexes $VO.H^{3+}$. Dokl. AN SSSR 142 no.1:137-140 Ja
'62. (MIRA 14:12)

1. Fiziko-tekhnicheskiy institut Kazanskogo filiala Akademii
nauk SSSR. Predstavleno akademikom A.Ye. Arbuzovym.
(Vanadyl compounds)
Paramagnetic resonance and relaxation)

RIVKIND, A.I.

Paramagnetic resonance in solutions of complex copper salts
and the frequency of Brownian rotation of the complexes.
Zhur.fiz.khim. 35 no.9:2099-2107 '61. (MIRA 14:10)

1. Fiziko-tekhnicheskiy institut Kazanskogo filiala AN SSSR.
(Copper compounds) (Brownian movements)

31512
S/058/61/000/010/040/100
A001/A101

24,7900 (1055, 1147, 1158, 1113)

AUTHOR: Rivkind, A.I.

TITLE: Effect of a solvent on paramagnetic resonance of complex copper ions

PERIODICAL: Referativnyy zhurnal. Fizika, no. 10, 1961, 160, abstract 10V337 (V sb. "Paramagnitn. rezonans", Kazan', Kazansk. un-t, 1960, 50-54)

TEXT: The author studied the effect of the nature of a solvent on the shape of electronic paramagnetic resonance spectra of complex ions of bivalent Cu at frequencies 1,569 and 9,395 Mc at temperatures ~ 77 , ~ 90 and $\sim 300^\circ\text{K}$. Complex-forming agents were: ammonia, ethylene diamine, monoethanol amine, diethanol amine, acetylacetone, and solvents were: water, monatomic alcohols, glycols, glycerin, pyridine, chloroform, etc. The author studied the dependence of the spectrum shape for diluted solutions of Cu complexes on the correlation time of Brown rotation of complexes τ_c , Larmor frequency ν_o , and dielectric constant of the solvent ϵ . Asymmetry of spectrum (growth of the width of super-fine components with increase of I_z) increases with the rise of τ_c or ν_o .

Card 1/2

Effect of a solvent ...

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S/058/61/000/010/040/100
A001/A101

This contradicts the theory of MacConnel (RZhFiz, 1957, no. 7, 17493). The conclusion has been drawn that asymmetry of spectra is not a relaxation effect, but is caused by the presence of an unsolved structure of superfine components. ✓

M. Meyl'man

[Abstracter's note: Complete translation]

Card 2/2

RIVKIND, A.I.

Association of complex copper ions in solutions; a study using
paramagnetic. Dokl. AN SSSR 135 no.2:365-368 N '60.

(MIRA 13:11)

1. Fiziko-tekhnicheskiy institut Kazanskogo filiala AN SSSR.
Predstavleno akademikom A.Ye.Arbutovym
(Copper compounds--Spectra)

EXCERPTA MEDICA Sec 16 Vol. 5/7 Cancer July 57

2574. RIVKIND A. W. Moscow *Hyperergic reaction of the body in the treatment of malignant tumours by X-rays (Russian text)* Arkh. Patol. 1957, 19/1 (61-66) Illus. 4

In a 57-year-old man with a blood pressure of 185/95 mm. Hg, a non-cornifying squamous cell carcinoma of the nasopharynx with metastases to the cervical lymph nodes was found. The patient complained of headaches, bloody discharge from the nose and of impaired vision in the right eye. X-ray irradiation was applied: within 44 days 4200 r. with additional 1200 r. to the cervical lymph nodes, and after a 75

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days' interval a second series, consisting of 1650 r. Three days after the last irradiation the patient died with the symptoms of a slight temperature rise, dizziness, loss of hearing on the right side, and occasional excitations without convulsions. Post-mortem examination showed destruction of the nasopharyngeal cavity, infiltration by tumour of the basis of the skull, metastases in the cervical lymph nodes, acute haemorrhagic glomerulonephritis, multiple haemorrhages in epi- and endocardium, hypertrophy of the left ventricle of the heart. Histological examination of the lymph nodes of the hilus and neck showed haemorrhages; the capillaries and precapillaries had a swollen, occasionally proliferating endothelium and contained hyaline and fibrinous thrombi; there was strong hyperplasia of the reticuloendothelium cells, erythrophagia and haemosiderin deposits. The kidneys showed enlarged glomeruli with hyaline and fibrinous thrombi in the lumina of the loops, and fibrinous-haemorrhagic exudation in the lumen of Bowman's capsule. In the brain there were haemorrhages, the vessels showing lesions similar to those occurring in the lymph nodes. The heart muscle was oedematous with haemorrhages and necrotic lesions. The lesions in the capillaries were comparable to those found in the capillaries of the lymph nodes.

As to the aetiopathogenesis, the author concludes that death was caused by a hyperergic reaction due to X-ray irradiation. The sensitization by the metabolic products of the neoplastic cells might have started as a result of the neoplastic growth. During the first X-ray irradiation there was an absorption of protein disintegration products, followed by an increased sensitization. During the second irradiation rapid disintegration of the neoplasm took place, which induced the hyperergic reaction. The hypertension may have played an important role in determining this reaction.

Albert - Wrocław

EXCERPTA MEDICA Sec.14 Vol.11/9 Radiology Sept 57.

RIVKIND, A.W.

1673. RIVKIND A.W. Moscow. *Hyperergic reaction of the body in the treatment of malignant tumours by X-rays (Russian text) ARKH. PATOL. 1957, 19/1 (61-66) Illus. 4

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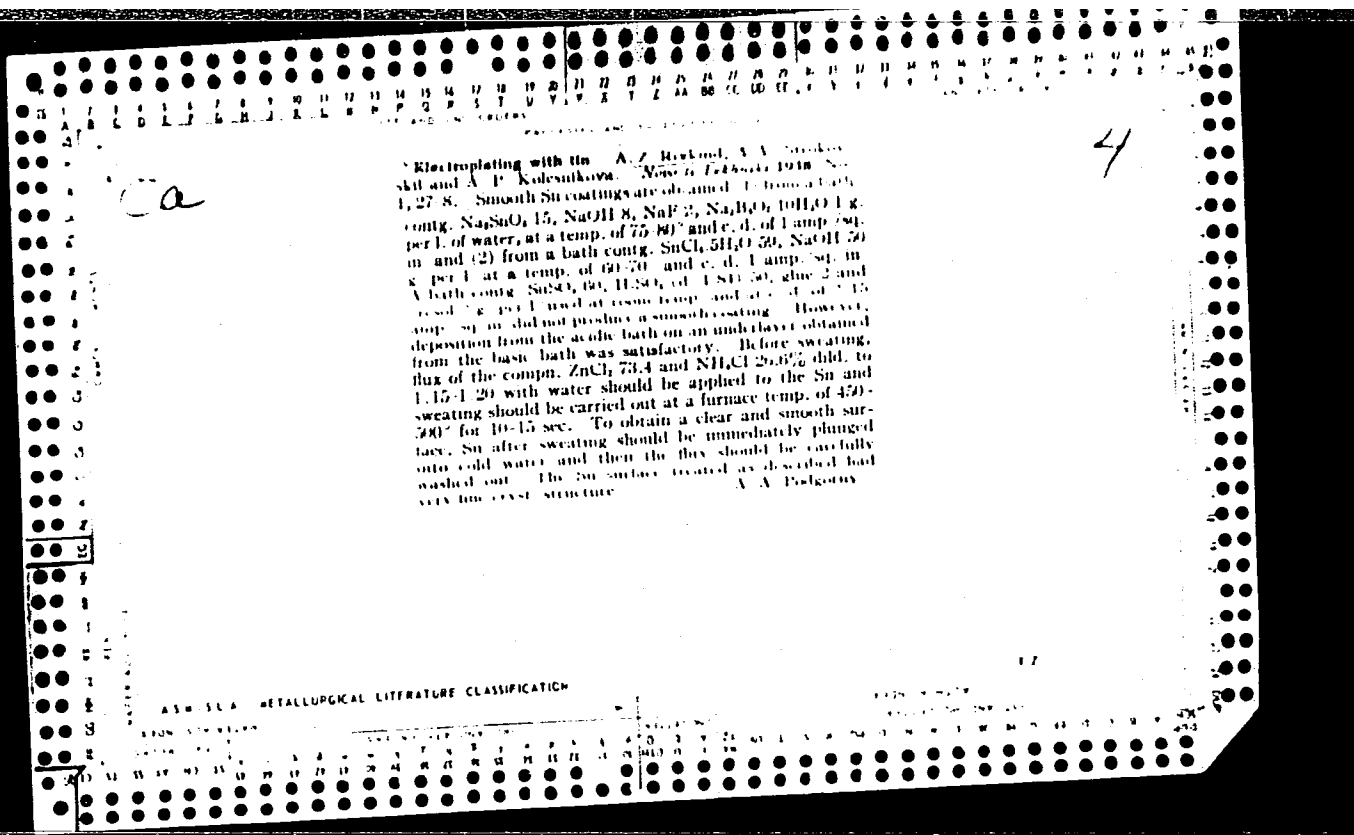
CONT.

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Albert - Wroclaw (V, 14, 16)

Fusion of electroplated tin coatings. A. Z. Rivkind.
Korrosiya i Korroz. Met. 4, No. 1, 51-53 (1958); *Khim.*
Referat. Zhur. 1, No. 10, 84 (1958); cf. C. A. 32, 4410P.
 Fusion of electroplated Sn coatings was tried by first treat-
 ing them in acid and in basic electrolytes. Acid solns.
 gave a smoother surface. A decrease of the exposure with
 a simultaneous increase of the temp. and a decrease of the
 thickness of the coating lowered considerably the drop
 formation (at a 0.0005 mm. thickness no drops are formed).
 For best results a coating from an acid soln. with an un-
 dercoating from a basic electrolyte is recommended. A
 flux obtained from $ZnCl_2$ and NH_4Cl dissolved in water
 is used on the electroplated Sn. W. R. Henn

ASME METALLURGICAL LITERATURE CLASSIFICATION

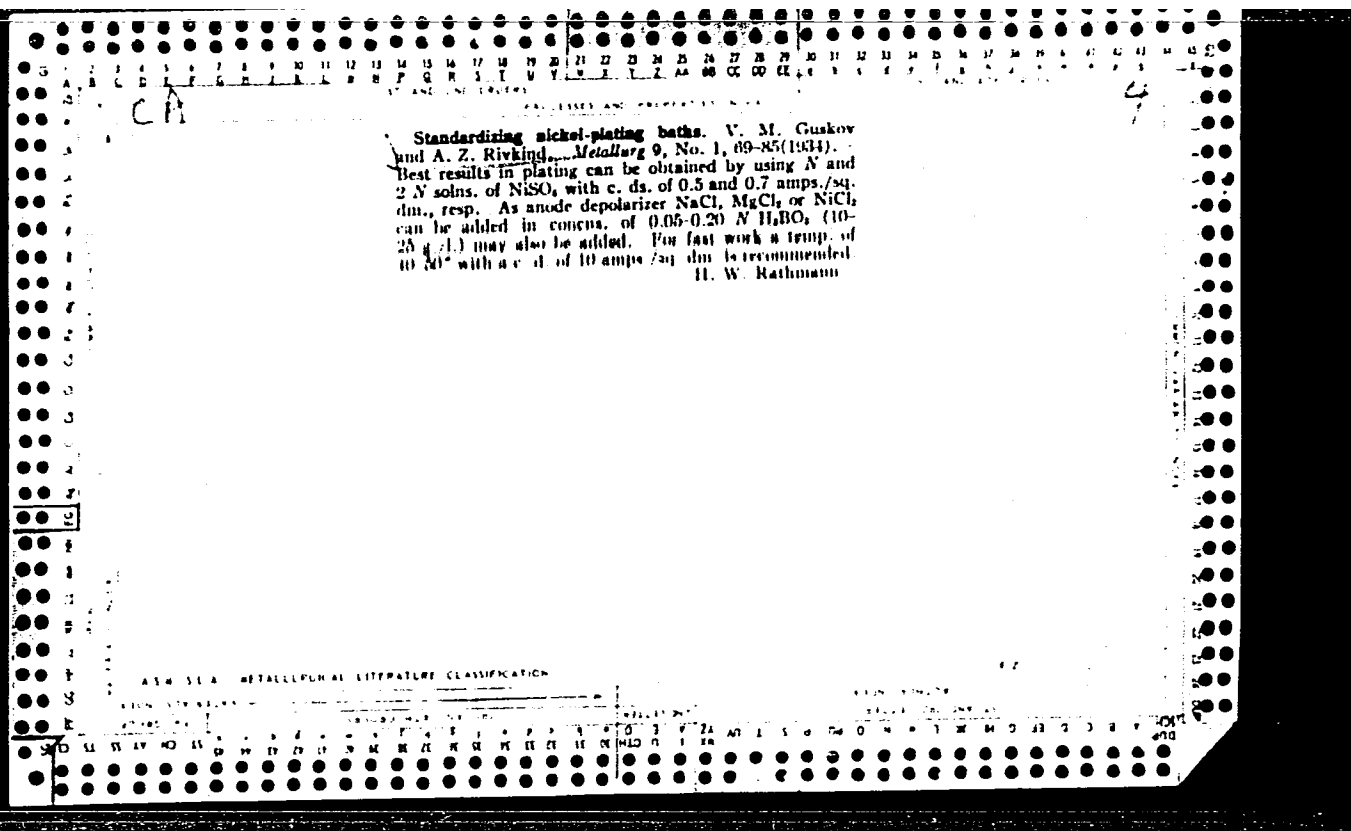


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The newest methods of phosphatization. A. Z. Riv-
kind. *Kovuziya i Borba s Nel* 5, 30-40(1939).--A review
of literature and practical applications. C. S. S.

ASME-STEEL METALLURGICAL LITERATURE CLASSIFICATION



CIA-RDP86-00513R0014449

Brush Plating of Nickel and Copper. A. Z. Ritzkind and L. V. Itskov (Korrosiya i Zashchita Met., 1938, 4, (1), 20-35; *Russ. Refrat. Zhur.*, 1938, 1, (11/12), 106; *C. Abstr.*, 1939, 33, 8500).--Nickel on soft steel and copper on a nickel base were studied. The nickel electrolyte consisted of $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$ 400, Na_2SO_4 100, H_2O 300, H_2BO_3 30 gm., and 1 litre of water. At low current density no addition of salt was necessary, and a small concentration of nickel was required. At optimum conditions, with an e.m.f. of 10 v., the current density increased to 12 amp. dm^2 at room temperature, and 18 amp. dm^2 at 60° C., optimum pH was 4-5, the yield was 90%, and the electrolyte velocity 200 millilitres dm^2 /minute. At smaller velocities an uneven wetting of the surface took place and the resistance was high; a further velocity increase did not increase the current density. Satisfactory deposits of nickel of 0.005 mm. were obtained; thicker deposits showed cracks and did not adhere well. This fact permits the use of brush plating of nickel for decorative purposes only, and with an undercoat of copper. The optimum composition of the electrolyte for copper was $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ 200, H_2SO_4 (d 1.84) 50 gm., and water 1 litre; this electrolyte at 10 v. permits a current density of 35-40 amp. dm^2 . The optimum electrolyte velocity was 200 millilitres dm^2 minute, and the yield 94-100%. Copper deposits of 0.025 mm. were almost pore-free, but were porous up to 0.01 mm. The elasticity and the cohesion of the Cu deposits were lower than those obtained by the usual electrolytic methods. A decrease of the brush pressure during the rubbing process, and an increase of speed, had a beneficial effect on the elasticity of the deposits.

ASAC-11A METALLURGICAL LITERATURE CLASSIFICATION

New Methods of Phosphate Coating. A. Z. Rivkind (*Korroziya i Bor'ba s*
Ny., 1939, 5, (1-2), 30-40).--[In Russian.] New and rapid methods of
phosphating metals, especially magnesium, aluminium, and zinc, are discussed.
D. A.

ASAC 1000 METALLURGICAL LITERATURE CLASSIFICATION

Co

Brush plating of nickel and copper. A. Z. Rivkind and L. V. Itselev. *Korrosiya i Bor'ba s Nel* 4, No. 1, 20-35 (1938); *Khim. Referat. Zhur.* 1, No. 11-12, 100 (1938). Ni on soft steel, and Cu on a Ni base were studied. The Ni electrolyte consisted of $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$ 400 g., $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$ 300 g., H_2BO_3 30 g. and 1 l. of water. At low c. d. no addn. of salt was necessary, and a small concn. of Ni

was required. At optimum conditions and with an e. m. f. of 10 v. the c. d. increased with the temp. to 12 amp./sq. dm. at room temp., and to 18 amp./sq. dm. at 60°. Optimum pH = 4.5, the yield was 90%, and the electrolyte velocity 200 ml./sq. dm./min. At smaller velocities an uneven wetting of the surface took place, and the resistance was high. A further velocity increase did not increase the c. d. Satisfactory deposits of Ni of 0.005 mm. were obtained. Thicker deposits showed cracks, and did not adhere well. This fact permits the use of brush plating of Ni for decorative purposes only and with an undercoat of Cu. The optimum compn. of the electrolyte for Cu was: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ 200 g., H_2SO_4 (1.84) 50 g. and water 1 l. This electrolyte at 10 v. permits a c. d. of 35-40 amp./sq. dm. The optimum electrolyte velocity was 200 ml./sq. dm./min., and the yield 98-100%. Deposits of Cu of 0.025 mm. were almost porefree, but were porous up to 0.01 mm. The elasticity and the cohesion of the Cu deposits were lower than those obtained by the usual electrolytic methods. A decrease of the brush pressure during the rubbing process, and an increase of its speed, had a beneficial effect on the elasticity of the deposits.

W. R. Henn

1ST AND 2ND COLUMNS										100 AND 1TH COLUMNS									
PROCESSES AND PROPERTIES INDEX																			
<div style="float: left; width: 10%; font-size: 2em; font-weight: bold;">BC</div> <div style="float: right; width: 10%; text-align: right;">B-I-4</div> <div style="clear: both;"></div> <p style="text-align: center;"> Selective Solution of copper-nickel ores. K. Rivkind (Nov. Tech. Ser. Corn. Prom., 1935, No. 18, 9).—To increase the depression of pyrite, an additional charge of cyanides was introduced at four points. Results were better in an alkaline medium, which was maintained by the use of CaO. Ch. Abs. (c) </p>																			
<div style="display: flex; justify-content: space-between;"> <div> <p>OPEN</p> <p>MATERIALS INDEX</p> <p>ASME-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> </div> <div> <p>1ST AND 2ND COLUMNS</p> <p>100 AND 1TH COLUMNS</p> </div> </div>																			

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SELECTIVE FLOTATION OF COPPER-ZINC ORES. K. Riihimäki. *Novosti Tekhniki, Ser. Gornorudnaya Prom.* 1935, No. 18, 8. —To increase the depression of pyrite an addnl.

SELECTIVE FLOTATION OF MERCURY AND ANTIMONY ORES. S. P. Aleksandrov and A. A. Boldirev. *Rudnye Met.* 5, No. 2, 35-41 (1934). — $K_2Cr_2O_7$ and H_2SO_4 , which were used to depress the Sb, also depress Hg. No good activator for the depressed Sb was found. H. W. Rathmann

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION

Selective flotation of copper-zinc ores. K. Riskind, *Novaya Tekhnika, Ser. Gornorudnaya Prom.* 1935, No 18, 8. To increase the depression of pyrite an added charge of cyanides was introduced at four points. Addition of collecting and foaming reagents proceeded uniformly in flotation machines. The use of xanthine and Aerosol was reversed in amount. The results were found to be better in alk. medium, which was maintained by the use of lime. A. A. Podgorniy

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

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A.E.S.

Geology

Flotation of apatite and similar oxide ores. K. L.
RIVKIND. Russ. 57,129, May 31, 1940. 1c. 801.
As flotative for apatite and similar minerals, a mixture of
fatty, naphthenic, and resinic soaps is used. M.Ho.